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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/936,794	11/13/2001	Gerard Howard Davies	ACO2694PIUS	9499
7590	08/23/2004			
			EXAMINER	
			FLETCHER III, WILLIAM P	
			ART UNIT	PAPER NUMBER
			1762	
DATE MAILED: 08/23/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/936,794	DAVIES ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	William P. Fletcher III	1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 09 June 2004.

2a) This action is **FINAL**.                  2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-20 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-20 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____.
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____.

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed 6/9/2004 have been fully considered but they are not persuasive. The declaration under 37 CFR 1.132 filed 6/9/2004 ("the Greenwood declaration") is insufficient to overcome the rejection of claims 1-20 based upon Sano et al. (US 3,977,888 A) as set forth in the last Office action.

Applicant argues and Mr. Greenwood declares that the composition of Sano is a 'silicate solution' which is patentably distinct from the claimed 'silica sol'. The Greenwood declaration summarizes:

The difference between a silica sol and a silicate solution can, in its simplest way, be explained by realizing that a silica sol is a stable colloidal dispersion of silica particles whereas a silicate solution is a solution of silicate ions.

This position is noted, but it does not distinguish over Sano. Sano clearly teaches that the coating composition comprises amorphous silica suspended, not fully dissolved, in the silicate ion binder solution (3:37-60). This reads on the definition of a 'dispersion':

A two-phase system where one phase consists of finely divided particles (often in the colloid size range) distributed throughout a bulk substance, the particles being the disperse or internal phase and the bulk being the continuous or external phase (*Hawley's Condensed Chemical Dictionary, 12<sup>th</sup> Edition*, p. 435, attached).

So Sano clearly teaches a colloidal dispersion of silica. Further, colloidal systems (including suspensions) exhibit a particular type of behavior:

In this size range [between 1 nanometer and 1 micron]...the particles do not settle out of the suspension by gravity...(*Hawley's*, p. 300-301, attached).

Since Sano teaches silica particles having sizes within this range (4:60-61), it is the examiner's position that Sano's colloidal dispersion is 'stable' according to page 3 of the Greenwood

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declaration. Consequently, even in light of the Greenwood declaration and the definitions provided therein, the composition of Sano reads on a silica sol and the declaration does not distinguish over or weigh against the rejections set-forth in the prior Office actions.

Additionally, the discussion of the various quantitative physical properties of a silica sol in the Greenwood declaration is noted. These properties are merely ‘normal’ or ‘typical’ and there is no evidence in the record that Sano’s composition does not and/or cannot also possess these properties. Consequently, this does not distinguish over or weight against the rejections set-forth in the prior Office action.

***Claim Rejections - 35 USC § 102***

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. **Claims 1-2, 7-8, 10, and 13-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Sano et al. (US 3,977,888 A).**

Sano et al. is applied here for the same reasons as given above and in paragraph 3 of the prior Office action mailed 1/30/2003.

***Claim Rejections - 35 USC § 103***

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**6. Claims 3, 9, and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sano et al. (US 3,977,888 A).**

Sano is applied here for the same reasons given above and in paragraph 5 of the prior Office action mailed 1/30/2003.

**7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sano et al. as applied to claim 1 above, and further in view of Plueddemann (Re 32,250).**

Sano and Plueddemann are applied here for the same reasons as given above and in paragraph 6 of the prior Office action mailed 1/30/2003.

**8. Claims 5-6 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sano et al. in view of van der Kolk et al. (US 4,888,056 A).**

Sano and van der Kolk are applied here for the same reasons as given above and in paragraph 7 of the prior Office action mailed 1/30/2003. Sano teaches that the silica particles are smaller than 325 mesh (7:1-3), which is inclusive of the claimed 3-100 nm particle size. Therefore, it would have been an obvious modification to the process of Sano and van der Kolk to use a silica particle size within the claimed range, with the expectation of providing the desired coating results, since Sano suggests such a particle size would be suitable in the coating composition. If the applicant were to provide a showing of unexpected results for using the claimed particle size, then the examiner would withdraw the rejection.

***Conclusion***

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

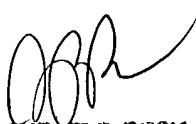
Any inquiry concerning this communication or earlier communications from the examiner should be directed to William P. Fletcher III whose telephone number is (571) 272-1419. The examiner can normally be reached on Monday through Friday, 9 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive P. Beck can be reached on (571) 272-1415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

WPF 8/18/2004

William P. Fletcher III  
Examiner  
Art Unit 1762

  
STEVE P. BECK  
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